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SOIL CONSERVATION AIDS SOYBEAN PRODUCTION

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U. S. DEPARTMENT OF AGRICULTURE
Soil Conservation Service

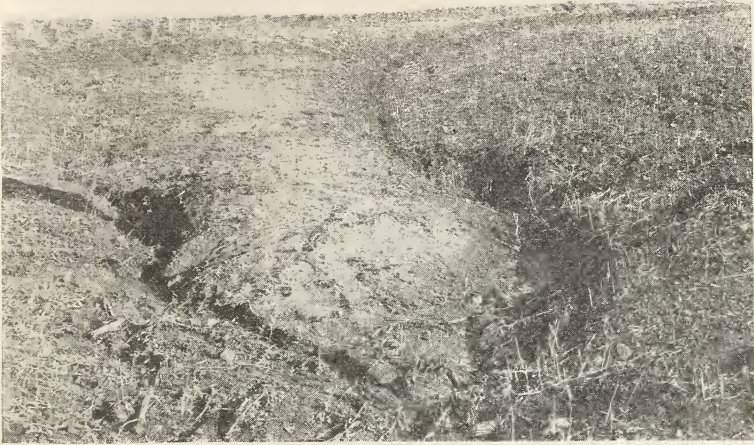
Conservation Measures Needed in Growing Soybeans

Soybeans play an essential role in the production of many civilian and war goods. Oil, flour, meal, and other soybean products have many commercial uses. The importance of this crop is indicated by the fact that the acreage of soybeans harvested for beans has increased from nearly $4\frac{1}{2}$ million acres in 1939 to approximately 11 million in 1943. To reach this acreage, much sloping land has been planted, and serious erosion has resulted. Unless conservation measures are employed, acre yields will drop and it will be difficult to reach production goals.

Special care should be taken to plant soybeans on land not subject to severe erosion or to plant where adequate conservation measures and practices can be used to control excessive soil and water losses. Land which has lost most of its topsoil should not be planted to soybeans. The yields will be disappointing, and gully erosion may be started. Soybean fields left unprotected after harvest are subject to severe erosion.



Serious erosion occurs when soybeans are planted and cultivated in straight rows up and down the slope.



A close-up view of gully erosion in a soybean field where land is sloping and the topsoil is thin.



Sheet and gully erosion caused by excessive water runoff after soybeans have been harvested.

Method of Planting Affects Soil and Water Losses

In Missouri in an 8-year experiment soybeans were grown in 42-inch rows and cultivated up and down the slope the first 4 years, and were grown in 8-inch rows (drilled solid) up and down the hill the next 4 years. The soybeans in wide rows lost more than twice as much soil as the beans drilled solid.



Soybeans drilled solid give greater protection to the soil. Erosion is greatly reduced. (Illinois Agricultural Experiment Station.)

Although the rainfall averaged 44.07 inches in the first 4-year period and only 39.73 inches in the second period, this difference in precipitation had little effect on erosion, as judged by the soil and water losses from corn planted in 42-inch rows, also there was little difference in the losses of soil from beans in 42-inch rows and from corn in such rows.

Contouring Increases Yields

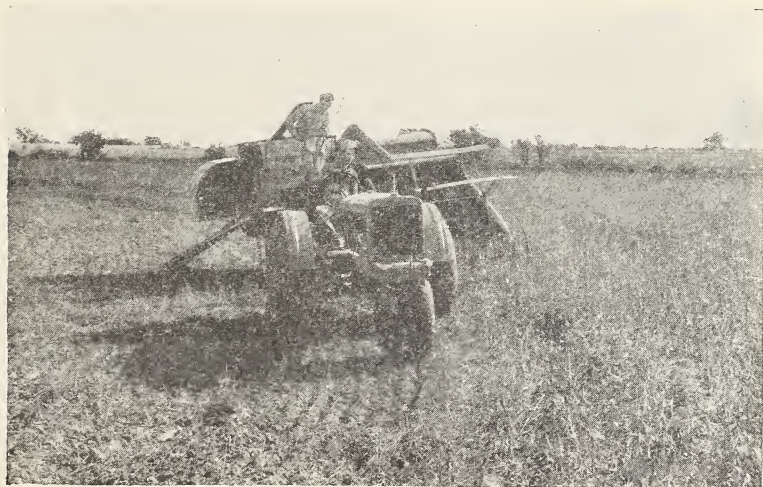
In Iowa, in 1943, field trials of soybeans were conducted on 38 farms in 8 counties on 4 different soil types. Beans drilled and cultivated on the contour averaged 2.2 bushels per acre more than those planted up and down the hill in the same field. Increases of more than 5 bushels per acre were obtained in some fields. In 1942 in similar field trials the average increase in yield on contoured fields was 3.2 bushels per acre. Similar results have been obtained in Illinois, Missouri, and other States.

Terracing Gives Adequate Protection

On long slopes and certain types of soil subject to serious erosion, terraces provide the additional protection necessary to stop excessive soil losses. Farmers can build them with a plow, at very little cost. If the soil is fertile, more intensive rotations can be used without danger of losing the topsoil.



Soybeans in 42-inch rows adequately protected from erosion by terraces and contour tillage.



Combining soybeans on a terrace ridge. No evidence of erosion.

A Place for Soybeans in the Rotation

If soybeans are to be grown on sloping land subject to erosion, they should replace corn, rather than follow corn, in the rotation. The soil conservation experiment station in Missouri reports soil losses of less than two tons per acre from soybeans following red clover in a rotation that does not include corn, as contrasted to nearly six tons from soybeans following corn in a rotation.



Soybeans in a 3-year rotation of red clover-soybeans-grain. The beans are planted and cultivated in 42-inch rows in a contour strip-cropping system.

Winter Cover Before and After Soybeans

Where the land lies unprotected by sod or cover crops until planting time in the spring, erosion losses are greater than where soybeans are planted on sod or following a winter cover crop.

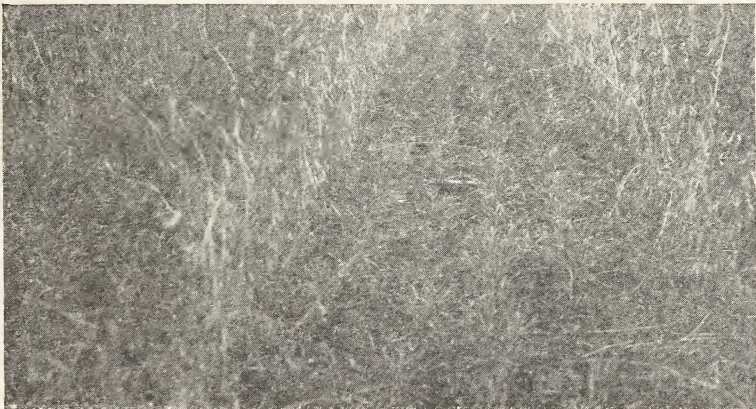
Soybean land should be protected from erosion after the crop is harvested. A winter grain crop should be sown between the bean rows before the pods are set or immediately behind the combine.

Increase the Yield by Protecting the Land

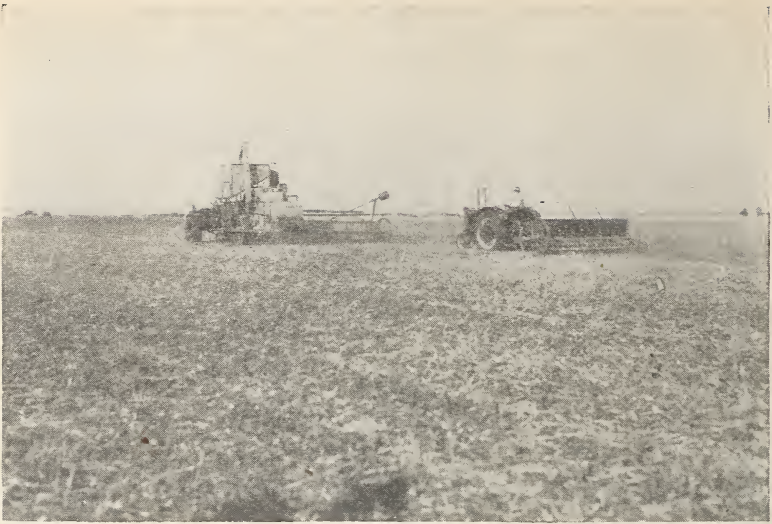
Our country needs more soybeans in 1944. Increase the yield by growing them on fertile soil that is well protected from erosion. Excessive soil and water losses can be prevented by using conservation practices, such as contour tillage, strip cropping, terracing, and sod or winter cover before the crop is planted and after it is harvested.



Plowing under a grass-legume sod for soybeans. The soil is protected by the plants until shortly before beans are drilled. The legumes provide nitrogen, and organic matter leaves the soil loose and in good tilth to absorb moisture.



Rye sown in soybeans the last of August with a 5-hole grain drill. Beans are ready to be harvested and the good growth of rye will provide winter protection to the soil.



Drilling winter wheat on soybean stubble immediately behind a combine harvesting soybeans. No seedbed preparation is necessary, the soybean straw is not a tillage obstacle, and the crop residue provides a protection to the surface of the soil. (Illinois Agricultural Experiment Station.)



Further information can be obtained from
the regional, State, or local office
of the
Soil Conservation Service
your State agricultural college
or
your county agent